



sequence listing.ST25.txt  
SEQUENCE LISTING

<110> the Johns Hopkins University School of Medicine

<120> Cloned Mammalian Polyamine Oxidase

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<140> 10/733,020

<141> 2003-12-12

<150> US 60/297,815

<151> 2001-06-13

<150> PCT/US02/18666

<151> 2002-06-13

<160> 42

<170> PatentIn version 3.2

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<212> DNA

<213> Homo sapiens

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sequence listing.ST25.txt

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Gly Leu Ala Gly Leu Ala Ala Ala Lys Ala Leu Leu Glu Gln Gly Phe
35          40          45

Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Ile Gly Gly Arg Val
50          55          60

Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Leu Gly Ala Thr Trp
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Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn
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Gly Leu Leu Glu Glu Thr Thr Asp Gly Glu Arg Ser Val Gly Arg Ile
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sequence listing.ST25.txt

Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
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Glu Val Tyr Asn Leu Thr Gln Glu Phe Phe Arg His Asp Lys Pro Val  
145 150 155 160

Asn Ala Glu Ser Gln Asn Ser Val Gly Val Phe Thr Arg Glu Glu Val  
165 170 175

Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp Pro Glu Ala Thr Lys Arg  
180 185 190

Leu Lys Leu Ala Met Ile Gln Gln Tyr Leu Lys Val Glu Ser Cys Glu  
195 200 205

Ser Ser Ser His Ser Met Asp Glu Val Ser Leu Ser Ala Phe Gly Glu  
210 215 220

Trp Thr Glu Ile Pro Gly Ala His His Ile Ile Pro Ser Gly Phe Met  
225 230 235 240

Arg Val Val Glu Leu Leu Ala Glu Gly Ile Pro Ala His Val Ile Gln  
245 250 255

Leu Gly Lys Pro Val Arg Cys Ile His Trp Asp Gln Ala Ser Ala Arg  
260 265 270

Pro Arg Gly Pro Glu Ile Glu Pro Arg Gly Glu Gly Asp His Asn His  
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Asp Thr Gly Glu Gly Gly Gln Gly Gly Glu Glu Pro Arg Gly Gly Arg  
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Trp Asp Glu Asp Glu Gln Trp Ser Val Val Val Glu Cys Glu Asp Arg  
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Glu Leu Ile Pro Ala Asp His Val Ile Val Thr Val Ser Leu Gly Val  
325 330 335

Leu Lys Arg Gln Tyr Thr Ser Phe Phe Arg Pro Gly Leu Pro Thr Glu  
340 345 350

Lys Val Ala Ala Ile His Arg Leu Gly Ile Gly Thr Thr Asp Lys Ile  
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sequence listing.ST25.txt

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Ala Leu Val Met Glu Lys Cys Asp Asp Glu Ala Val Ala Glu Ile Cys  
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Thr Glu Met Leu Arg Gln Phe Thr Gly Asn Pro Asn Ile Pro Lys Pro  
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Arg Arg Ile Leu Arg Ser Ala Trp Gly Ser Asn Pro Tyr Phe Arg Gly  
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Gln Val Leu Phe Ser Gly Glu Ala Thr His Arg Lys Tyr Tyr Ser Thr  
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sequence listing.ST25.txt

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sequence listing.ST25.txt

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Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Val Gly Gly Arg Val  
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Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Pro Gly Ala Thr Trp  
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Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn  
85 90 95

Gly Leu Leu Glu Glu Thr Thr Asp Gly Glu Arg Ser Val Gly Arg Ile  
100 105 110

Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
115 120 125

Arg Arg Ile Pro Lys Asp Val Val Glu Glu Phe Ser Asp Leu Tyr Asn  
130 135 140

Glu Val Tyr Asn Leu Thr Gln Glu Phe Phe Arg His Asp Lys Pro Val  
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Asn Ala Glu Ser Gln Asn Ser Val Gly Val Phe Thr Arg Glu Glu Val  
165 170 175

Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp Pro Glu Ala Thr Lys Arg  
180 185 190

Leu Lys Leu Ala Met Ile Gln Gln Tyr Leu Lys Val Glu Ser Cys Glu  
195 200 205

Ser Ser Ser His Ser Met Asp Glu Val Ser Leu Ser Ala Phe Gly Glu  
210 215 220

Trp Thr Glu Ile Pro Gly Ala His His Ile Ile Pro Ser Gly Phe Met  
225 230 235 240

Arg Val Val Glu Leu Leu Ala Glu Gly Ile Pro Ala His Val Ile Gln  
245 250 255

Leu Gly Lys Pro Val Arg Cys Ile His Trp Asp Gln Ala Ser Ala Arg  
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sequence listing.ST25.txt

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His Arg Leu Gly Ile Gly Thr Thr Asp Lys Ile Phe Leu Glu Phe Glu  
305 310 315 320

Glu Pro Phe Trp Gly Pro Glu Cys Asn Ser Leu Gln Phe Val Trp Glu  
325 330 335

Asp Glu Ala Glu Ser His Thr Leu Thr Tyr Pro Pro Glu Leu Trp Tyr  
340 345 350

Arg Lys Ile Cys Gly Phe Asp Val Leu Tyr Pro Pro Glu Arg Tyr Gly  
355 360 365

His Val Leu Ser Gly Trp Ile Cys Gly Glu Glu Ala Leu Val Met Glu  
370 375 380

Arg Cys Asp Asp Glu Ala Val Ala Glu Ile Cys Thr Glu Met Leu Arg  
385 390 395 400

Gln Phe Thr Gly Asn Pro Asn Ile Pro Lys Pro Arg Arg Ile Leu Arg  
405 410 415

Ser Ala Trp Gly Ser Asn Pro Tyr Phe Arg Gly Ser Tyr Ser Tyr Thr  
420 425 430

Gln Val Gly Ser Ser Gly Ala Asp Val Glu Lys Leu Ala Lys Pro Leu  
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Pro Tyr Thr Glu Ser Ser Lys Thr Ala Pro Met Gln Val Leu Phe Ser  
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Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Val Gly Gly Arg Val  
50 55 60  
Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Leu Gly Ala Thr Trp  
65 70 75 80  
Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn  
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sequence listing.ST25.txt

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Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
115 120 125

Arg Arg Ile Pro Lys Asp Val Val Glu Glu Phe Ser Asp Leu Tyr Asn  
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Glu Pro Met Gln Val Leu Phe Ser Gly Glu Ala Thr His Arg Lys Tyr  
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35 40 45

Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Ile Gly Gly Arg Val  
50 55 60

Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Leu Gly Ala Thr Trp  
65 70 75 80

Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn  
85 90 95

Gly Leu Leu Glu Glu Thr Thr Asp Gly Glu Arg Ser Val Gly Arg Ile  
Page 10

sequence listing.ST25.txt

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105

110

Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
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Arg Arg Ile Pro Lys Asp Val Val Glu Glu Phe Ser Asp Leu Tyr Asn  
130 135 140

Glu Val Tyr Asn Leu Thr Gln Glu Phe Phe Arg His Asp Lys Pro Val  
145 150 155 160

Asn Ala Glu Ser Gln Asn Ser Val Gly Val Phe Thr Arg Glu Glu Val  
165 170 175

Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp Pro Glu Ala Thr Lys Arg  
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195 200 205

Ser Ser Ser His Ser Met Asp Glu Val Ser Leu Ser Ala Phe Gly Glu  
210 215 220

Trp Thr Glu Ile Pro Gly Ala His His Ile Ile Pro Ser Gly Phe Met  
225 230 235 240

Arg Val Val Glu Leu Leu Ala Glu Gly Ile Pro Ala His Val Ile Gln  
245 250 255

Leu Gly Lys Pro Val Arg Cys Ile His Trp Asp Gln Ala Ser Ala Arg  
260 265 270

Pro Arg Gly Pro Glu Ile Glu Pro Arg Gly Val Leu Lys Arg Gln Tyr  
275 280 285

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290 295 300

His Arg Leu Gly Ile Gly Thr Thr Asp Lys Ile Phe Leu Glu Leu Glu  
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Asp Glu Ala Glu Ser His Thr Leu Thr Tyr Pro Pro Glu Leu Trp Tyr  
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sequence listing.ST25.txt

Arg Lys Ile Cys Gly Phe Asp Val Leu Tyr Pro Pro Glu Arg Tyr Gly  
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His Val Leu Ser Gly Trp Ile Cys Gly Gly Glu Ala Leu Val Met Glu  
 370 375 380

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 420 425 430

Gln Val Gly Ser Ser Gly Ala Asp Val Glu Lys Leu Ala Lys Pro Leu  
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Pro Tyr Thr Glu Ser Ser Lys Thr Ala His Gly Ser Ser Thr Lys Gln  
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Gln Pro Gly His Leu Phe Ser Ser Lys Cys Pro Glu Gln Pro Leu Asp  
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Ala Thr His Arg Lys Tyr Tyr Ser Thr Thr His Gly Ala Leu Leu Ser  
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sequence listing.ST25.txt

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attgagcccc ggggtgaggg cgaccacaat cagcacaccg gggaggggtg ccaggggtgga 960
gaggagcccc tagctgccgt gtgctcctgc cttcctgata ctctgtagaa aggattttta 1020
tcttctgtag agctagccgc cctgactgcc ttcagacctg gccctgtagc ttt 1073

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<210> 10
<211> 312
<212> PRT
<213> Homo sapiens

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<400> 10

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Met Gln Ser Cys Glu Ser Ser Gly Asp Ser Ala Asp Asp Pro Leu Ser
1          5          10          15

```

```

Arg Gly Leu Arg Arg Arg Gly Gln Pro Arg Val Val Val Ile Gly Ala
20          25          30

```

```

Gly Leu Ala Gly Leu Ala Ala Ala Lys Ala Leu Leu Glu Gln Gly Phe
35          40          45

```

```

Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Val Gly Gly Arg Val
50          55          60

```

```

Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Leu Gly Ala Thr Trp
65          70          75          80

```

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Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn
85          90          95

```

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Gly Leu Leu Glu Glu Thr Thr Asp Gly Glu Arg Ser Val Gly Arg Ile
100         105         110

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sequence listing.ST25.txt

Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
115 120 125

Arg Arg Ile Pro Lys Asp Val Val Glu Glu Phe Ser Asp Leu Tyr Asn  
130 135 140

Glu Val Tyr Asn Leu Thr Gln Glu Phe Phe Arg His Asp Lys Pro Val  
145 150 155 160

Asn Ala Glu Ser Gln Asn Ser Val Gly Val Phe Thr Arg Glu Glu Val  
165 170 175

Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp Pro Glu Ala Thr Lys Arg  
180 185 190

Leu Lys Leu Ala Met Ile Gln Gln Tyr Leu Lys Val Glu Ser Cys Glu  
195 200 205

Ser Ser Ser His Ser Met Asp Glu Val Ser Leu Ser Ala Phe Gly Glu  
210 215 220

Trp Thr Glu Ile Pro Gly Ala His His Ile Ile Pro Ser Gly Phe Met  
225 230 235 240

Arg Val Ala Glu Leu Leu Ala Glu Gly Ile Pro Ala His Val Ile Gln  
245 250 255

Leu Gly Lys Pro Val Arg Cys Ile His Trp Asp Gln Ala Ser Ala Arg  
260 265 270

Pro Arg Gly Pro Glu Ile Glu Pro Arg Gly Glu Gly Asp His Asn His  
275 280 285

Asp Thr Gly Glu Gly Gly Gln Gly Gly Glu Glu Pro Leu Ala Ala Val  
290 295 300

Cys Ser Cys Leu Pro Asp Pro Leu  
305 310

<210> 11  
<211> 1171  
<212> DNA  
<213> Homo sapiens

<400> 11  
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gcggaacgga tgcaaagttg tgaatccagt ggtgacagt cggatgaccc tctcagtcgc 120  
ggcctacgga gaaggggaca gcctcgtgtg gtggtgatcg gcgccggcctt ggctggcctg 180  
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sequence listing.ST25.txt

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gctgcagcca aagcacttct tgagcagggg ttcacggatg tcaactgtgct tgaggcttcc 240
agccacgtcg gagggcgtgt gcagagtgtg aaacttggac acgccacctt tgagctggga 300
gccacctgga tccatggctc ccatgggaac cctatctatc atctagcaga agccaacggc 360
ctcctggaag agacaaccga tggggaacgc agcgtgggcc gcatcagcct ctattccaag 420
aatggcgtgg cctgctacct taccaaccac ggccgcagga tccccaagga cgtggttgag 480
gaattcagcg atttatacaa cgaggtctat aacttgaccc aggagtcttt ccggcacgat 540
aaaccagtca atgctgaaag tcaaaatagc gtgggggtgt tcacccgaga ggaggtgcgt 600
aaccgcatca ggaatgaccc tgacgacca gagggcacca agcgcctgaa gctcgccatg 660
atccagcagt acctgaaggt ggagagctgt gagagcagct cacacagcat ggacgaggtg 720
tccctgagcg ccttcgggga gtggaccgag atccccggcg ctcaccacat catcccctcg 780
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attgagcccc ggggtgaggg cgaccacaat cacgacactg gggaggggtg ccaggggtgt 960
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tgactgcctt cagacctggc cctgtagctt t 1171

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<210> 12  
 <211> 314  
 <212> PRT  
 <213> Homo sapiens

<400> 12

Met Gln Ser Cys Glu Ser Ser Gly Asp Ser Ala Asp Asp Pro Leu Ser  
 1 5 10 15

Arg Gly Leu Arg Arg Arg Gly Gln Pro Arg Val Val Val Ile Gly Ala  
 20 25 30

Gly Leu Ala Gly Leu Ala Ala Ala Lys Ala Leu Leu Glu Gln Gly Phe  
 35 40 45

Thr Asp Val Thr Val Leu Glu Ala Ser Ser His Val Gly Gly Arg Val  
 50 55 60

Gln Ser Val Lys Leu Gly His Ala Thr Phe Glu Leu Gly Ala Thr Trp  
 65 70 75 80

sequence listing.ST25.txt

Ile His Gly Ser His Gly Asn Pro Ile Tyr His Leu Ala Glu Ala Asn  
85 90 95

Gly Leu Leu Glu Glu Thr Thr Asp Gly Glu Arg Ser Val Gly Arg Ile  
100 105 110

Ser Leu Tyr Ser Lys Asn Gly Val Ala Cys Tyr Leu Thr Asn His Gly  
115 120 125

Arg Arg Ile Pro Lys Asp Val Val Glu Glu Phe Ser Asp Leu Tyr Asn  
130 135 140

Glu Val Tyr Asn Leu Thr Gln Glu Phe Phe Arg His Asp Lys Pro Val  
145 150 155 160

Asn Ala Glu Ser Gln Asn Ser Val Gly Val Phe Thr Arg Glu Glu Val  
165 170 175

Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp Pro Glu Ala Thr Lys Arg  
180 185 190

Leu Lys Leu Ala Met Ile Gln Gln Tyr Leu Lys Val Glu Ser Cys Glu  
195 200 205

Ser Ser Ser His Ser Met Asp Glu Val Ser Leu Ser Ala Phe Gly Glu  
210 215 220

Trp Thr Glu Ile Pro Gly Ala His His Ile Ile Pro Ser Gly Phe Met  
225 230 235 240

Arg Val Val Glu Leu Leu Ala Glu Gly Ile Pro Ala His Val Ile Gln  
245 250 255

Leu Gly Lys Pro Val Arg Cys Ile His Trp Asp Gln Ala Ser Ala Arg  
260 265 270

Pro Arg Gly Pro Glu Ile Glu Pro Arg Gly Glu Gly Asp His Asn His  
275 280 285

Asp Thr Gly Glu Gly Gly Gln Gly Gly Glu Ala Ala Arg Leu Ile Glu  
290 295 300

Met Tyr Arg Asp Leu Phe Gln Gln Gly Thr  
305 310

<210> 13  
<211> 943  
<212> DNA



sequence listing.ST25.txt

<213> Homo sapiens

<400> 13

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ggcctacgga gaaggggaca gcctcgtgtg gtggtgatcg gcgccggcct ggctggcctg    180
gctgccatcc accgcctggg cattggcacc accgacaaga tctttctgga attcgaggag    240
cccttctggg gccctgagtg caacagccta cagtttgtgt gggaggacga agcggagagc    300
cacaccctca cctaccaccc tgagctctgg taccgcaaga tctgcggcct tgatgtcctc    360
taccgcctg agcgctacgg ccatgtgctg agcggctgga tctgcgggga ggaggccctc    420
gtcatggaga agtgtgatga cgaggcagtg gccgagatct gcacggagat gctgcgtcag    480
ttcacaggga accccaacat tccaaaacct cggcgaatct tgcgctcggc ctggggcagc    540
aacccttact tccgcggctc ctattcatac acgcaggtgg gctccagcgg ggcggatgtg    600
gagaagctgg ccaagccccct gccgtacaca gagagctcaa agacagcgcc catgcgggtg    660
ctgttttccg gtgaggccac ccaccgcaag tactattcca ccaccacgg tgctctgctg    720
tccggccagc gtgaggctgc ccgcctcatt gagatgtacc gagacctctt ccagcagggg    780
acctgagggc tgtcctcgct gctgagaaga gccactaact cgtgacctcc agcctgcccc    840
ttgctgccgt gtgctcctgc cttcctgatc ctctgtagaa aggattttta tcttctgtag    900
agccagccgc cctgactgcc ttcagacctg gccctgtagc ttt                                943
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<210> 14

<211> 238

<212> PRT

<213> Homo sapiens

<400> 14

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Met Gln Ser Cys Glu Ser Ser Gly Asp Ser Ala Asp Asp Pro Leu Ser
1          5          10          15
```

```
Arg Gly Leu Arg Arg Arg Gly Gln Pro Arg Val Val Val Ile Gly Ala
20          25          30
```

```
Gly Leu Ala Gly Leu Ala Ala Ile His Arg Leu Gly Ile Gly Thr Thr
35          40          45
```

```
Asp Lys Ile Phe Leu Glu Phe Glu Glu Pro Phe Trp Gly Pro Glu Cys
50          55          60
```

```
Asn Ser Leu Gln Phe Val Trp Glu Asp Glu Ala Glu Ser His Thr Leu
65          70          75          80
```

sequence listing.ST25.txt

Thr Tyr Pro Pro Glu Leu Trp Tyr Arg Lys Ile Cys Gly Phe Asp Val  
85 90 95

Leu Tyr Pro Pro Glu Arg Tyr Gly His Val Leu Ser Gly Trp Ile Cys  
100 105 110

Gly Glu Glu Ala Leu Val Met Glu Lys Cys Asp Asp Glu Ala Val Ala  
115 120 125

Glu Ile Cys Thr Glu Met Leu Arg Gln Phe Thr Gly Asn Pro Asn Ile  
130 135 140

Pro Lys Pro Arg Arg Ile Leu Arg Ser Ala Trp Gly Ser Asn Pro Tyr  
145 150 155 160

Phe Arg Gly Ser Tyr Ser Tyr Thr Gln Val Gly Ser Ser Gly Ala Asp  
165 170 175

Val Glu Lys Leu Ala Lys Pro Leu Pro Tyr Thr Glu Ser Ser Lys Thr  
180 185 190

Ala Pro Met Arg Val Leu Phe Ser Gly Glu Ala Thr His Arg Lys Tyr  
195 200 205

Tyr Ser Thr Thr His Gly Ala Leu Leu Ser Gly Gln Arg Glu Ala Ala  
210 215 220

Arg Leu Ile Glu Met Tyr Arg Asp Leu Phe Gln Gln Gly Thr  
225 230 235

<210> 15  
<211> 451  
<212> DNA  
<213> Homo sapiens

<400> 15  
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gcggacggta tgcaaagttg tgaatccagt ggtgacagtg cggatgtgga gaagctggcc 120  
aagcccctgc cgtacacgga gagctcaaag acagcgccca tgcaggtgct gttttccggt 180  
gaggccaccc accgcaagta ctattccacc acccacggtg ctctgctgtc cggccagcgt 240  
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tcctcgtgc tgagaagagc cactaactcg tgacctccag cctgcccctt gctgccgtgt 360  
gctcctgcct tcctgatcct ctgtagaaag gatttttatc ttctgtagag ccagccgccc 420  
tgactgcctt cagacctggc cctgtagctt t 451

sequence listing.ST25.txt

<210> 16  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 16

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 1 5 10 15

Ala Lys Pro Leu Pro Tyr Thr Glu Ser Ser Lys Thr Ala Pro Met Gln  
 20 25 30

Val Leu Phe Ser Gly Glu Ala Thr His Arg Lys Tyr Tyr Ser Thr Thr  
 35 40 45

His Gly Ala Leu Leu Ser Gly Gln Arg Glu Ala Ala Arg Leu Ile Glu  
 50 55 60

Met Tyr Arg Asp Leu Phe Gln Gln Gly Thr  
 65 70

<210> 17  
 <211> 12  
 <212> DNA  
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<400> 17

ggaaaggtac gg

12

<210> 18  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 18

ctgcaggttc ct

12

<210> 19  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 19

aacttggtaa gt

12

<210> 20  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 20

cctcaggaca cg

12

sequence listing.ST25.txt

<210> 21  
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<400> 21  
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<210> 22  
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<400> 22  
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<210> 23  
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 <212> DNA  
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<400> 23  
 ctgaaggat ct 12

<210> 24  
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 <213> Homo sapiens

<400> 24  
 ccgcaggtgg ag 12

<210> 25  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 25  
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<210> 26  
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 <212> DNA  
 <213> Homo sapiens

<400> 26  
 catcagggaa cc 12

<210> 27  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 acagcggtaa gc 12

sequence listing.ST25.txt

<210> 28  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 28  
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<210> 29  
 <211> 24  
 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 29  
 cgccgctcgc cgcagactta cttc 24

<210> 30  
 <211> 24  
 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 30  
 aaagctacag ggccaggtct gaag 24

<210> 31  
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 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 31  
 tcggcgccat atgcaaagtt gtgaatccag t 31

<210> 32  
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 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 32  
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<210> 33  
 <211> 25  
 <212> DNA  
 <213> Artificial

<220>

<223> synthetic oligonucleotide primer

<400> 33  
gatcccggcg gaccatgtga ttgtg 25

<210> 34  
<211> 24  
<212> DNA  
<213> Artificial

<220>  
<223> synthetic oligonucleotide primer

<400> 34  
ctcaggcggg tagaggacat caaa 24

<210> 35  
<211> 21  
<212> DNA  
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<220>  
<223> synthetic oligonucleotide primer

<400> 35  
gccccggggt gtgctaaaga g 21

<210> 36  
<211> 21  
<212> DNA  
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<220>  
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<400> 36  
cctgcatggg cgctgtcttt g 21

<210> 37  
<211> 24  
<212> DNA  
<213> Artificial

<220>  
<223> synthetic oligonucleotide primer

<400> 37  
cgcagactta cttccccggc tcag 24

<210> 38  
<211> 24  
<212> DNA  
<213> Artificial

<220>  
<223> synthetic oligonucleotide primer

<400> 38

ctgcatgggc tggttgtata aatc

<210> 39  
 <211> 24  
 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 39  
 ggatgctaac aggggcgccg taaa

24

<210> 40  
 <211> 25  
 <212> DNA  
 <213> Artificial

<220>  
 <223> synthetic oligonucleotide primer

<400> 40  
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25

<210> 41  
 <211> 13  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Hydrophilic synthetic peptide based on sequences of the PAOh1/SMO protein

<400> 41

Glu Glu Pro Arg Gly Gly Arg Trp Asp Glu Asp Glu Gln  
 1 5 10

<210> 42  
 <211> 13  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Hydrophilic synthetic peptide based on sequences of the PAOh1/SMO protein

<400> 42

Glu Glu Val Arg Asn Arg Ile Arg Asn Asp Pro Asp Asp  
 1 5 10